SONY®

DME PROCESSOR PACK
MVE-9000-C

MULTI FORMAT DME PROCESSOR
MVE-9000

HK-PSU04

MKE-9020M

MKE-9021M

MKE-9040M

INSTALLATION MANUAL
1st Edition

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，
人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠ WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.

Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

MVE-9000   Serial No. 10001 and Higher
HK-PSU04   Serial No. 10001 and Higher
MKE-9020M   Serial No. 10001 and Higher
MKE-9021M   Serial No. 10001 and Higher
MKE-9040M   Serial No. 10001 and Higher

For MVE-9000
Attention-when the product is installed in Rack:

1. **Prevention against overloading of branch circuit**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

2. **Providing protective earth**
   When this product is installed in a rack and is supplied power from an outlet on the rack, please confirm that the outlet is provided with a suitable protective earth connection.

3. **Internal air ambient temperature of the rack**
   When this product is installed in a rack, please make sure that the internal air ambient temperature of the rack is within the specified limit of this product.

4. **Prevention against achieving hazardous condition due to uneven mechanical loading**
   When this product is installed in a rack, please make sure that the rack does not achieve hazardous condition due to uneven mechanical loading.

5. **Install the equipment while taking the operating temperature of the equipment into consideration**
   For the operating temperature of the equipment, refer to the specifications of the Operation Manual.

6. **When performing the installation, keep the rear of the unit 10 cm (4 inches) or more away from walls in order to obtain proper exhaust and radiation of heat.**

For MVE-9000
When using a LAN cable:
   For safety,do not connect to the connector for peripheral device wiring that might have excessive voltage.

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Manual Structure

Purpose of this manual

This manual is the installation manual of DME Processor Pack MVE-9000-C and their optional boards and units.
This manual is intended for use by trained system and service engineers, and describes the information on installing the MVE-9000-C system.

Related manuals

The following manuals are prepared for MVE-9000-C and their optional boards and units.

- **Operation Manual (Supplied with MVE-9000-C)**
  This manual describes the application and operation of MVE-9000-C system.

- **Maintenance Manual (Available on request)**
  This manual describes the detailed service information.
  If this manual is required, please contact your local Sony Sales Office/Service Center.

Contents

This manual is organized by following sections.

Section 1   Installation
This section describes the operating environment, power supply, installation space, installation of optional boards and units, rack mounting, connectors, input and output signals of connectors, checking upon completion of installation, and system configuration.

Section 2   Service Overview
This section describes the troubleshooting and periodic inspection and maintenance.

Trademark

Registered trademark used in this manual is follows.

- Ethernet is a registered trademark of Xerox Corporation.

Section 1
Installation

1-1. Operating Environment

Operating guaranteed temperature :   +5 ˚C to +40 ˚C
Performance guaranteed temperature : +10 ˚C to +35 ˚C
Operating humidity :   10 % to 90 %
         (relative humidity)
Storage temperature :   −20 ˚C to +60 ˚C
Mass (when all options are installed) : Approx. 27 kg

Prohibited locations for installation
· Areas where the unit will be exposed do direct sunlight
  or any other strong lights.
· Dusty areas
· Areas subject to vibration.
· Areas with strong electric or magnetic fields.
· Areas near heat sources.
· Areas subject to electrical noise.
· Areas subject where is subjected to static electricity.

Ventilation
The inside of the MVE-9000-C is cooled by a fan (both
sides).
The power supply can be damaged if the exhaust vent
(both sides) and air intake (front panel) are blocked or the
fan is stopped.
Therefore, leave a blank space of more than 10 cm in the
front and both sides of the MVE-9000-C.

1-2. Power Supply

1-2-1. Power Specifications

A switching regulator is used for the power supply of this
unit. The voltage within the range of 100 V to 240 V can
be used without changing the supply voltage.

Power requirements :   AC 100 to 240 V ±10 %
Power frequency :   50/60 Hz
Current consumption (when all options are installed) :
                      6.0 to 2.5 A

| Notes |

· As the inrush current at turn-on is a maximum 110 A (at
  100 V)/220 A (at 240 V), the capacity of the AC power
  source must be commensurate with this load.
  If the capacity of the AC power is not adequately large,
  the AC power source braker will operate or the unit will
  abnormally operate.
· The MVE-9000 contains the single power supply unit as
  the standard configuration. A maximum of two power
  supply units may be installed. When starting up the
  MVE-9000, be sure to turn on the power of one or more
  power supply units.

1-2-2. Recommended Power Cord

This unit does not come with a power cord.
To get a power cord, please contact your local Sony Sales
Office/Service Center.

WARNING

・ Use the approved Power Cord (3-core mains lead)/
  Appliance Connector/Plug with earthing-contacts that
  conforms to the safety regulations of each country if
  applicable.
・ Use the Power Cord (3-core mains lead)/Appliance
  Connector/Plug conforming to the proper ratings (Volt-
  age, Ampere).

If you have questions on the use of the above Power Cord/
Appliance Connector/Plug, please contact your local Sony
Sales Office/Service Center.

WARNING

・ Never use an injured power cord.
・ Plugging the power cord in the AC inlet, push as far as it
  will go.

For customers in the U.S.A. and Canada
  ① Power cord, 125 V 10 A (2.4 m) : ⚠ 1-557-377-11

AC inlet
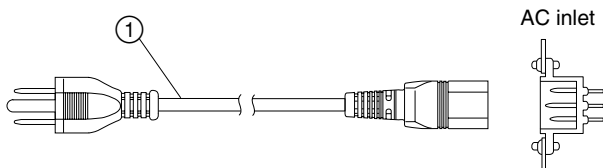
For customers in the all European countries
  ① Power cord, 250 V 10 A (2.4 m) : ⚠ 1-782-929-21

AC inlet

1-3. Installation Space (External dimensions)

Unit : mm

1-4. Installing the Options

The MVE-9000-C is shipped from the factory with the necessary option (refer to the following table) already installed in the MVE-9000, in accordance with the specified system configuration.

MVE-9000-C options

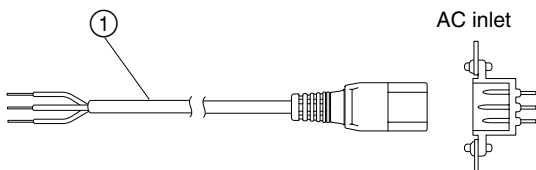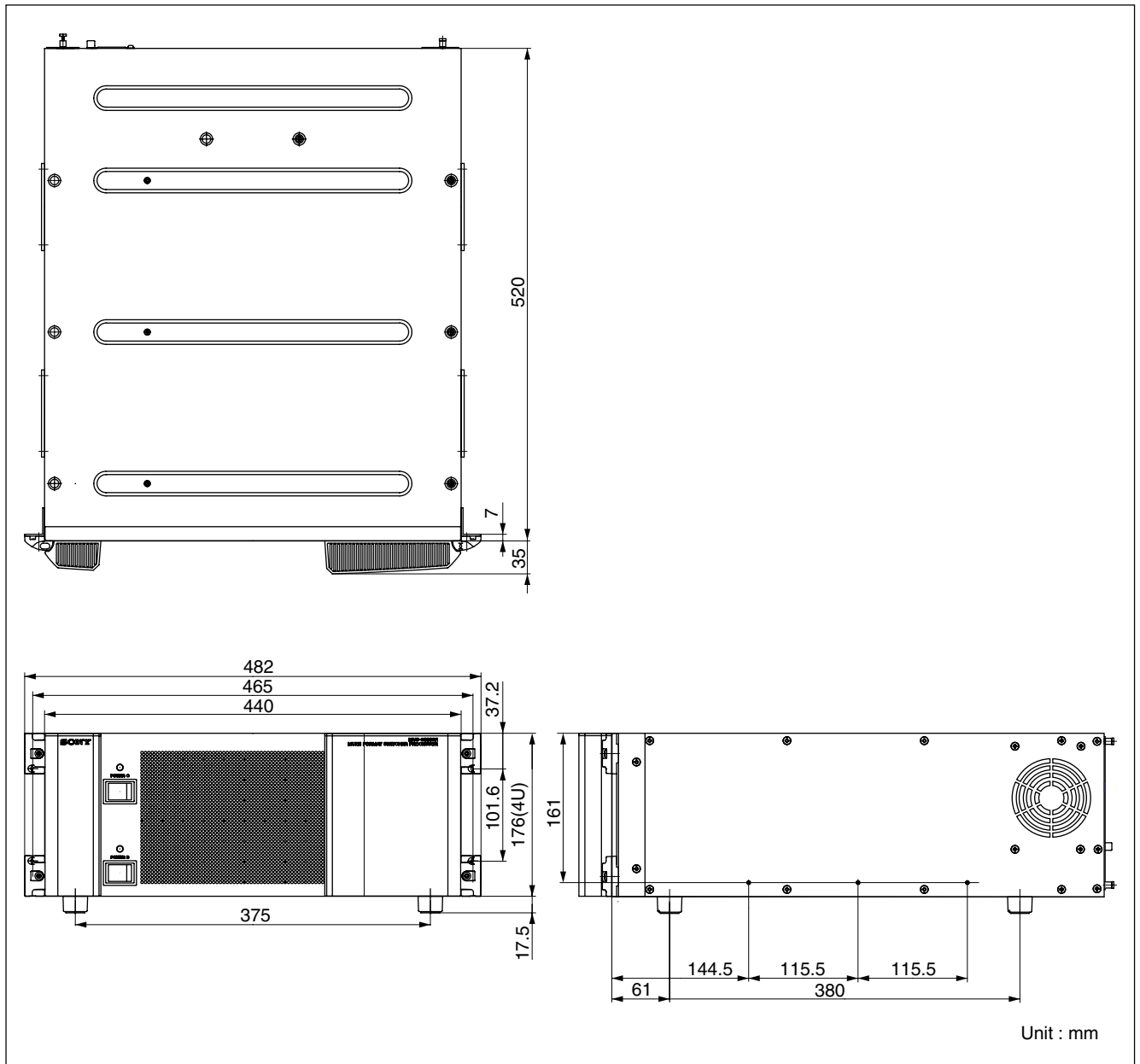| Model name	Board configuration	
	Plug-in board	**Connector board**
MKE-9020M MVS Interface Board Set	–	CN-2357A board CN-2357B board
MKE-9021M Input/Output Board Set	–	CN-2355A board CN-2355B board
MKE-9040M Advanced Effects Board	DVP-24A board	
HK-PSU04 Power Supply Unit	–	–

1-4-1. Installing the Plug-in Boards

| CAUTION |

Be sure to turn off the POWER switch and unplug the power cord from the wall outlet before starting the installation work.
If the installation work is started with the POWER switch left on, it may cause electrical shock or damage of printed circuit boards.

Installation procedure

1. Turn off the main power of the MVE-9000 and disconnect the AC power cord from the wall outlet.
2. Loosen the four screws (with drop-safe) and remove the front panel in the direction of the arrow.
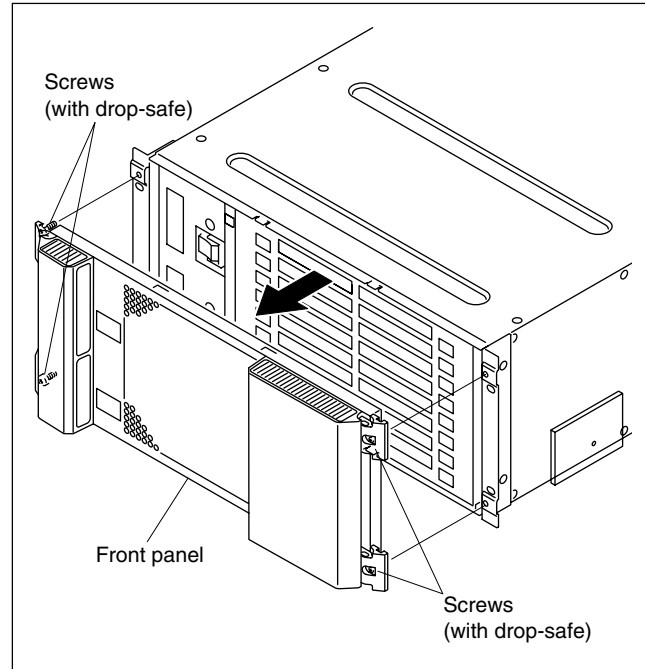
3. Remove the four screws (B3 × 5), and remove the "plug-in board loose-proof assembly".
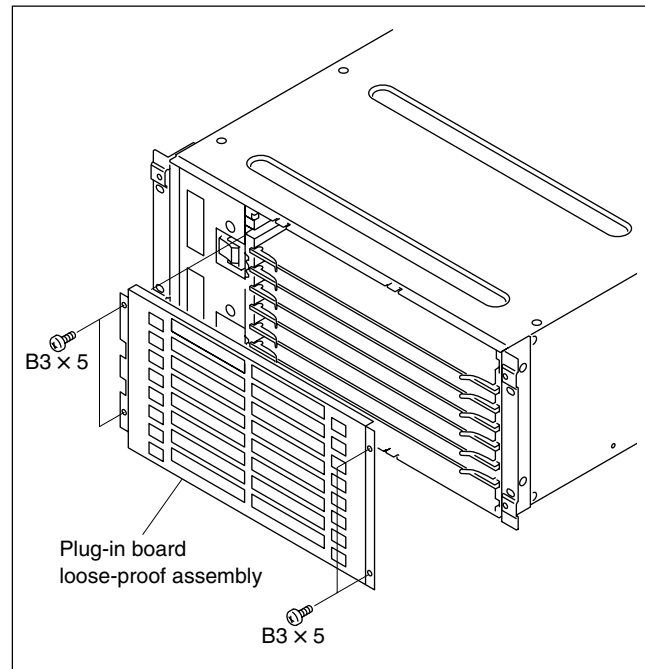
4. While the eject levers are kept open as shown in the illustration, insert the plug-in board into the board guide rails.

Eject levers

Name of option	Name of board	Slot on the front side
MKE-9040M	DVP-24A board*1	3, 4, 5, 6

*1 : The DVP-24A boards are assigned to the following channels in accordance with the slots to which the boards are inserted.

Slot	Channel
3	CH1
4	CH2
5	CH3
6	CH4
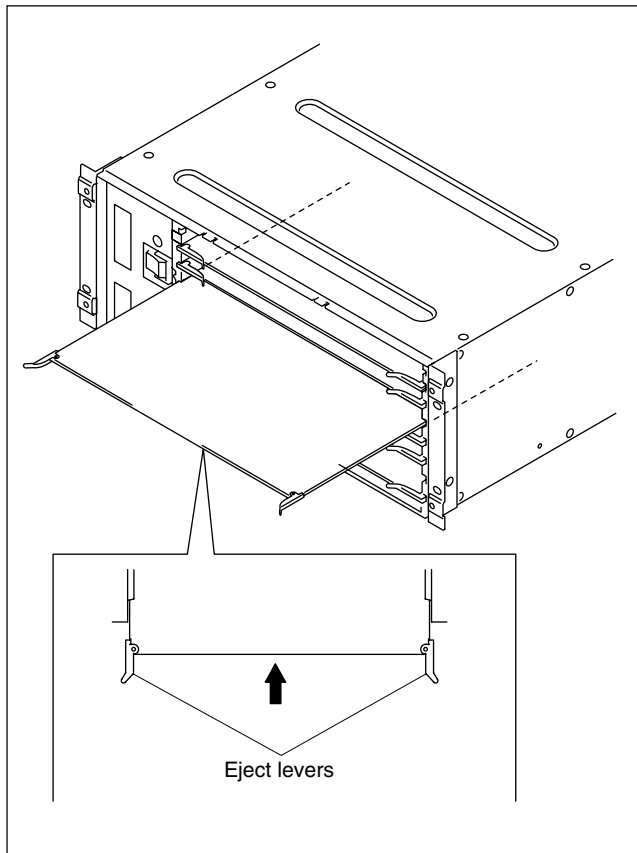
5. While closing the eject levers in the direction of arrow ①, push in the plug-in board.

Eject lever   Eject lever
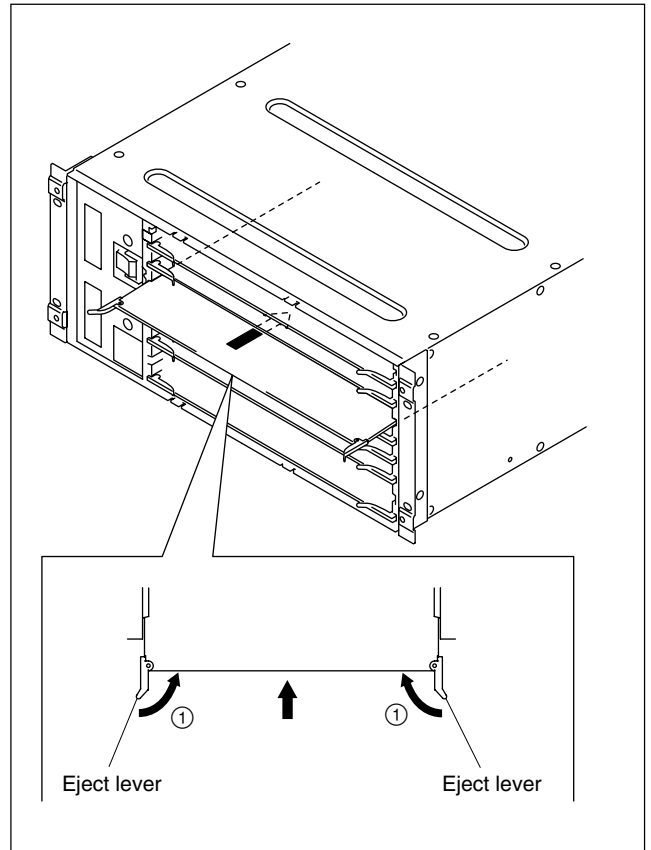
6. Attach the plug-in board loose-proof assembly and the front panel by reversing the installation steps 2, 3.

1-4-2. Installing the Connector Board

The board slot

Name of option	Name of board	Slot on the rear side
MKE-9020M	CN-2357A board	3
	CN-2357B board	5
MKE-9021M	CN-2355A board	3
	CN-2355B board	5

Installation procedure

1. Remove the two screws and remove the blank panel.

    Note

    Store the removed blank panel in a safe location.

B3 × 5

Blank panel

B3 × 5
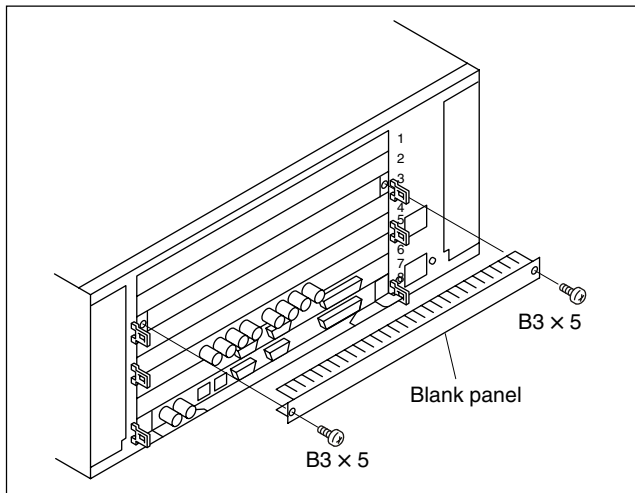
The following procedures vary with the options.

In the case of other than MKE-9020M

2. Insert the connector board horizontally level and secure it with the two fixing screws.

Fixing screw

Connector board

Fixing screw
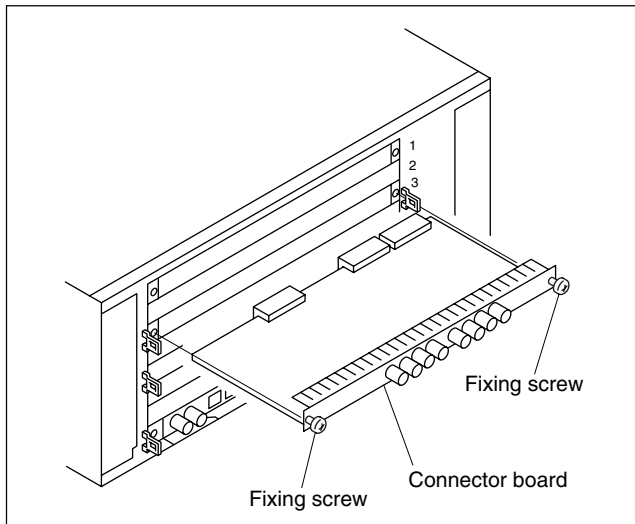
In the case of MKE-9020M

Parts required (Supplied accessory of MKE-9020M)
- Connecting cable
- Harness support
- Cover panel
- Screws (Two of PSW3 × 6)

Perform the following procedures after step 1.

2. While the board levers are kept open as shown in the illustration, insert the connector board into the board guide rails.

3. While closing the board levers in the direction of arrow ①, push in the connector board and secure it with the two screws.

Fixing screw

Connector board

Fixing screw

① Board lever

① Board lever
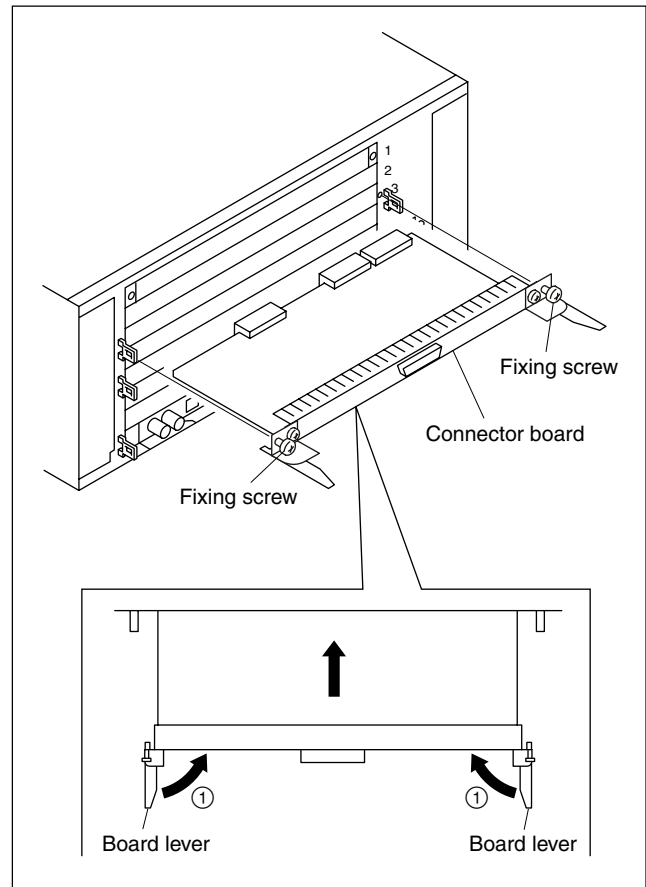
(Continued)

4. Remove the blank panel from the slots 2 and 4.
5. Attach the cover panel and secure it with the two screws.
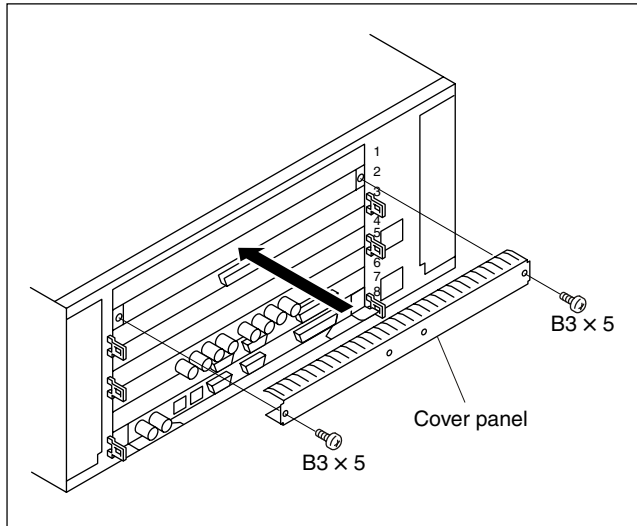
6. Attach the connecting cable on the harness support.
7. Connect the connecting cable to the connector.
8. Secure the harness support to the cover panel using the two screws supplied with MKE-9020M.
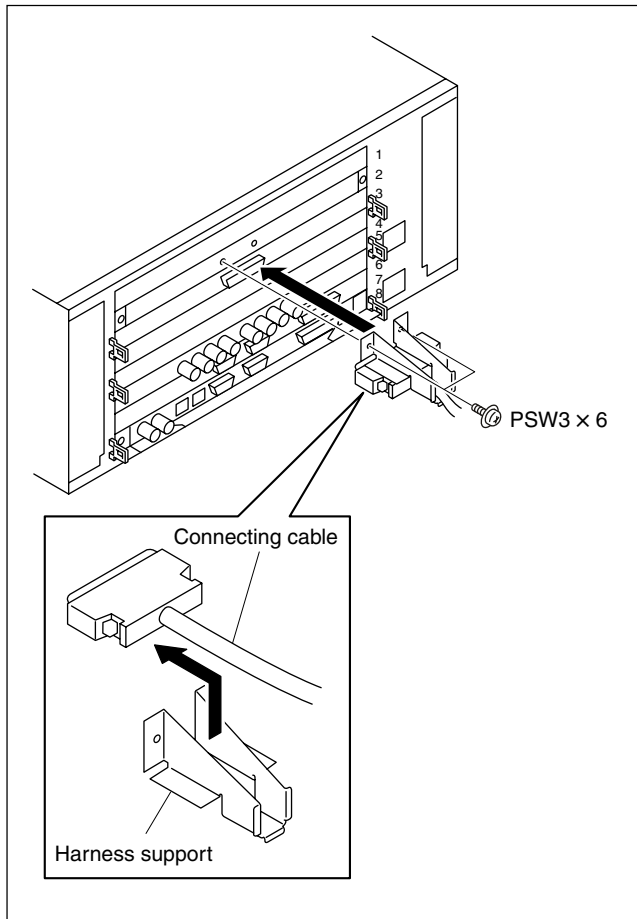
1-4-3. Installing the HK-PSU04

The HK-PSU04 is used after it is installed in the MVE-9000.

CAUTION

Before installing the HK-PSU04, be sure to turn off the main power. If the HK-PSU04 is installed while the main power is turned on, it can result in electrical shock or damage to printed circuit boards.

Installation procedure

1. Remove the front panel of the MVE-9000.
   (Refer to Section 1-4-1.)
2. Remove the two screws (B3 × 5) fixing the PS cover, and remove the PS cover.
3. Remove the two screws (PSW3 × 6) fixing the blank panel, and remove the blank panel.

   Note

   Store the removed blank panel in a safe place.
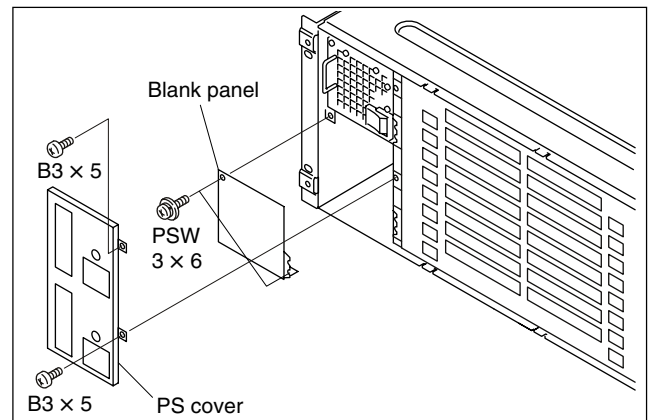
4. Push the portion of the HK-PSU04 indicated by the arrow and insert the HK-PSU04 into deep end as far as it will go.
5. Secure the HK-PSU04 with the two screws removed in step 3.
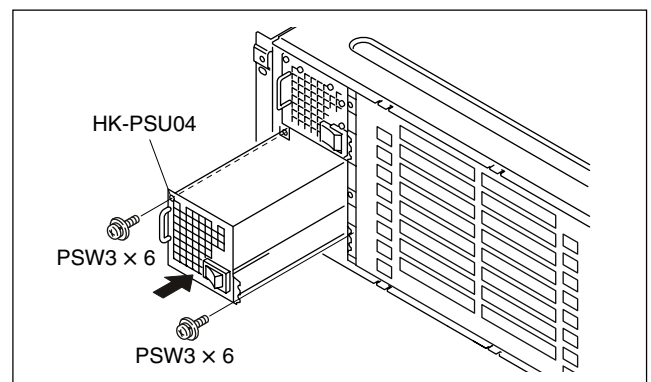
6. Install the PS cover and the front panel by reversing the installation steps of 1, 2.

1-5. Rack Mounting

The MVE-9000 installs in a 19-inch standard rack.
To mount the MVE-9000 in a rack, use the specified rack mount kit and follow the procedure described below.

Specified rack mount kit : RMM-10

Note

If a rack mount kit other than the specified one is used, the unit may not be correctly install in a 19-inch standard rack.

Parts of the RMM-10

- Rack tools   2 pcs
- Right rack mount adaptor   1 pc
- Left rack mount adaptor   1 pc
- Rack tool attaching screws   6 pcs
  (B4 × 6 : 7-682-560-09)
- Rack tool attaching screws   6 pcs
  (B4 × 10 : 7-682-560-10)

1. Precautions for rack mounting

WARNING

- To prevent the rack from falling or moving, fix the rack on a flat and steady floor using bolts or other fixings.
  If the rack falls due to the weight of the equipment, it may cause death or injury.
- Be sure to use the specified rack mount kit.
  If not, injury may result and the equipment may fall due to insufficient strength.
- After rack mounting, be sure to tighten the screws on the rack angle and fix the unit in the rack.
  If the screws on the rack angle are not tightened, the unit may slip from the rack and fall, causing injury.

CAUTION

When mounting the unit in the rack, note the following:
- Be sure to mount in the rack with two persons or more.
- Be careful not to catch your fingers or hands in the rack mount rail or others.
- Mount in the rack in a stable position.

Note

If several units are mounted in a rack, it is recommended that a ventilation fan is installed to prevent temperature rise inside the rack.

2. Rack mounting procedure

This section describes the rack mounting procedure using the RMM-10 rack mount kit.

Note

Tighten the screws to the following torque.
Tightening torque : 120×10^{-2} N•m {12.2 kgf•cm}

1. Attach the rack tool to the side of the equipment using the specified six screws.

    Note

    Use B4 × 6 screws.
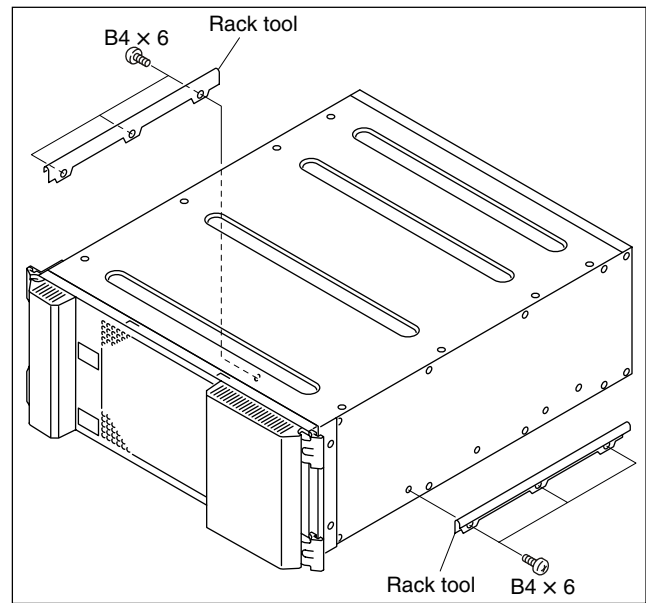
2. Loosen the screws on the rear of the right and left adaptors and adjust the length of the adaptor according to the depth of the rack.
    (The illustration below shows the left adaptor.)
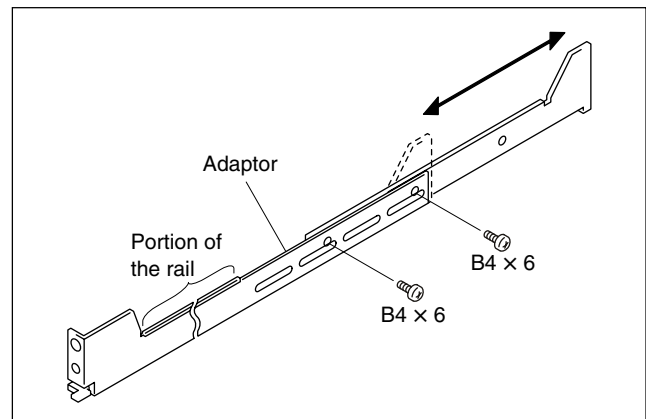
Note

Maximum depth of adaptor : 750 mm
Minimum depth of adaptor : 595 mm

3. Attach the right and left adaptors to the rack completely using the specified six screws.
(The illustration below shows the left adaptor.)
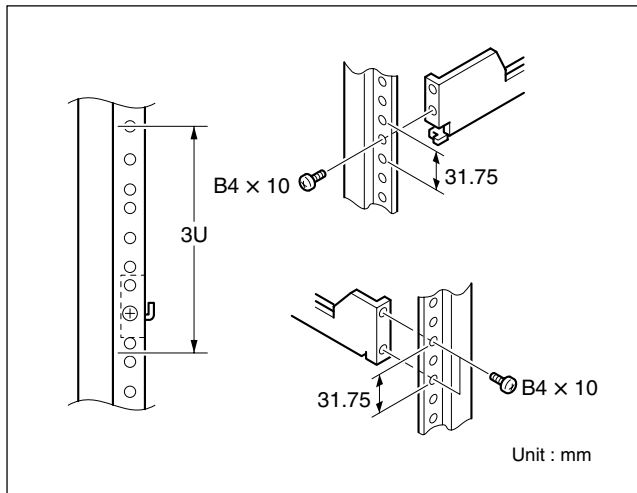
4. Tighten the screws (B4 × 6 : two screws each on the right and left) for adjusting the length of the adaptor completely (the screws that were loosened in step 2).

5. Align the groove of the rack tool at the side of the equipment with the rail, and slide the equipment to the rear.

   Note

   The rack tools are hooked on the rails as shown below.
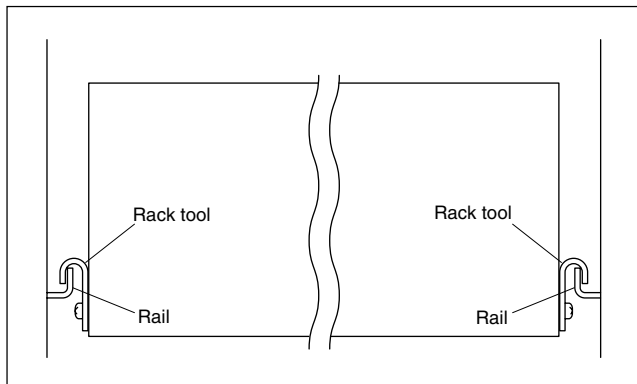
6. Remove the front panel. (Refer to Section 1-4-1.)

7. Fix the rack angles in the rack using the specified screws.
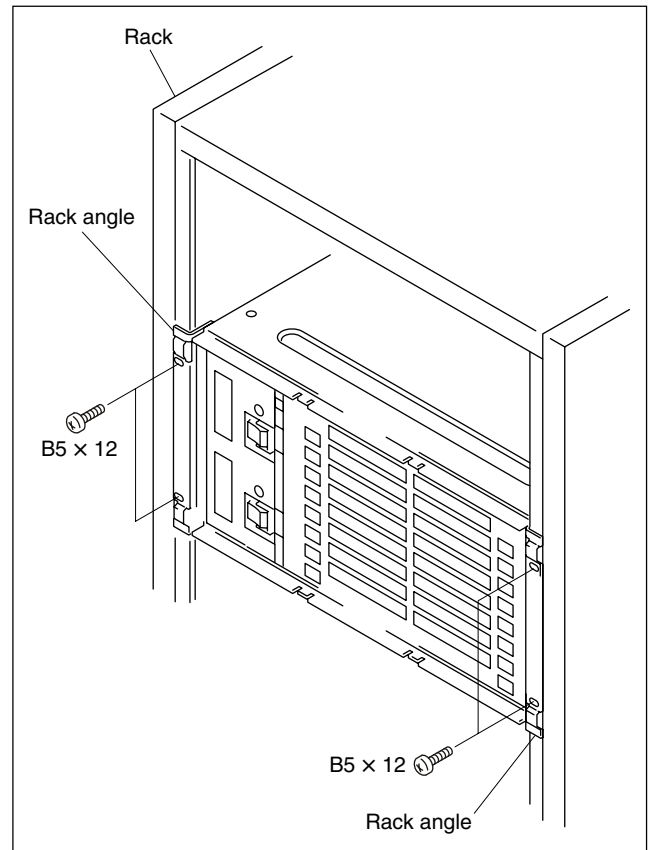
8. Install the front panel to the equipment.

1-6. Matching Connectors and Cables

Use the following connectors, cables or equivalents when connecting cables to the unit.

Model name	Panel indication	Connector name	Matching connector and cable	
			Name	Sony part No.
MVE-9000	REF IN EXT IN 1-4 MONI OUT 1-4	BNC, 75 Ω	BNC, 75 Ω BELDEN 8281 coaxial cable	
	REMOTE 1-4	D-sub 9-pin, Female	D-sub 9-pin, Male Connector 9-pin, Male Junction Shell 9-pin	 1-560-651-00[*1] 1-561-749-00
	GPI GPI2	D-sub 25-pin, Female	D-sub 25-pin, Male Connector 25-pin, Male Junction Shell 25-pin	 1-560-904-11[*1] 1-563-377-11
	DATA CTRL	RJ-45 modular jack[*2]	–	–
MKE-9020M	SWITCHER A, B	MDR 68-pin, Female	Dedicated cable (Supplied accessory of MKE-9020M)	–
MKE-9021M	IN V1-V4 IN K1-K4 OUT V1-V4 OUT K1-K4	BNC, 75 Ω	BNC, 75 Ω BELDEN 8281 coaxial cable	

*1 : The following crimp contact is required for the plug.
    AWG#18 to #22 : 1-566-493-21
    AWG#22 to #24 : 1-564-774-11
    AWG#24 to #30 : 1-564-775-11
*2 : Conforms to the IEEE 802.3 Ethernet100BASE-TX standards.

1-7. Input/Output Signals of Connectors

The input/output signals of the connectors at the rear panel are as follows.

Note

<CONTROLLER> indicates a controlling device.
<DEVICE> indicates a controlled device.

REMOTE 1-4 : RS-422A (D-sub 9-pin, Female)
<DEVICE> (∗1)
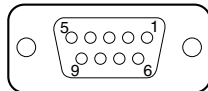
– EXT VIEW –

Pin No.	Signal Name	Function
1	FG	Frame ground
2	TX−	Transmitted data (−)
3	RX+	Received data (+)
4	GND	Ground
5	–	No Connection
6	GND	Ground
7	TX+	Transmitted data (+)
8	RX−	Received data (−)
9	–	No Connection

(∗1) : Editing control unit such as BVE-9100 (EDITOR)

DATA
CTRL : 100BASE-TX, RJ-45 (8-pin)
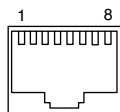
– EXT VIEW –

Pin No.	Signal Name	Function
1	TX+	Transmitted data (+)
2	TX−	Transmitted data (−)
3	RX+	Received data (+)
4	–	No Connection
5	–	No Connection
6	RX−	Received data (−)
7	–	No Connection
8	–	No Connection

GPI, GPI2 : (D-sub 25-pin, Female)
INPUT × 8, TTL
OUTPUT × 4, relay contacts 30 V 0.1 A
(resistive load)
OUTPUT × 4, open collector 30 V rated voltage
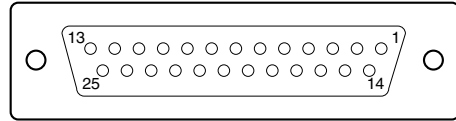
– EXT VIEW –

Pin No.	Signal Name	Function
1	GND	Ground
2	GND	Ground
3	GPI IN 2	General-purpose input
4	GPI IN 4	
5	GPI IN 6	
6	GPI IN 8	
7	GPI OUT 1B	General-purpose relay output (B)[∗2]
8	GPI OUT 2B	
9	GPI OUT 3B	
10	GPI OUT 4B	
11	GPI OUT 6	General-purpose open collector output[∗3]
12	GPI OUT 8	
13	GPI OUT COM	Ground for open collector output
14	GND	Ground
15	GPI IN 1	General-purpose input
16	GPI IN 3	
17	GPI IN 5	
18	GPI IN 7	
19	GPI OUT 1A	General-purpose relay output (A)[∗2]
20	GPI OUT 2A	
21	GPI OUT 3A	
22	GPI OUT 4A	
23	GPI OUT 5	General-purpose open collector output[∗3]
24	GPI OUT 7	
25	GPI OUT COM	Ground for open collector output

Note

A and B of the same number constitute a pair of relay contacts.

[∗2]<Relay>

GPI OUT n B
GPI OUT n A
n;1-4

[∗3]<Open collector output>

GPI OUT 5-8
GPI OUT COM
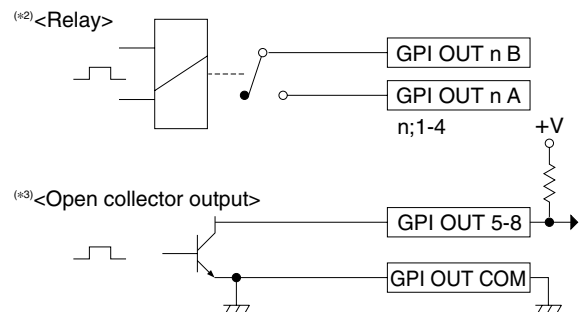
1-8. Checks on Completion of Installation

1-8-1. On-board Switches Setting and LED Functions

Note

The number shown in parentheses ( ) indicates the address on the circuit board.

1. CA-54CFA board

A side/Component side

<LED>
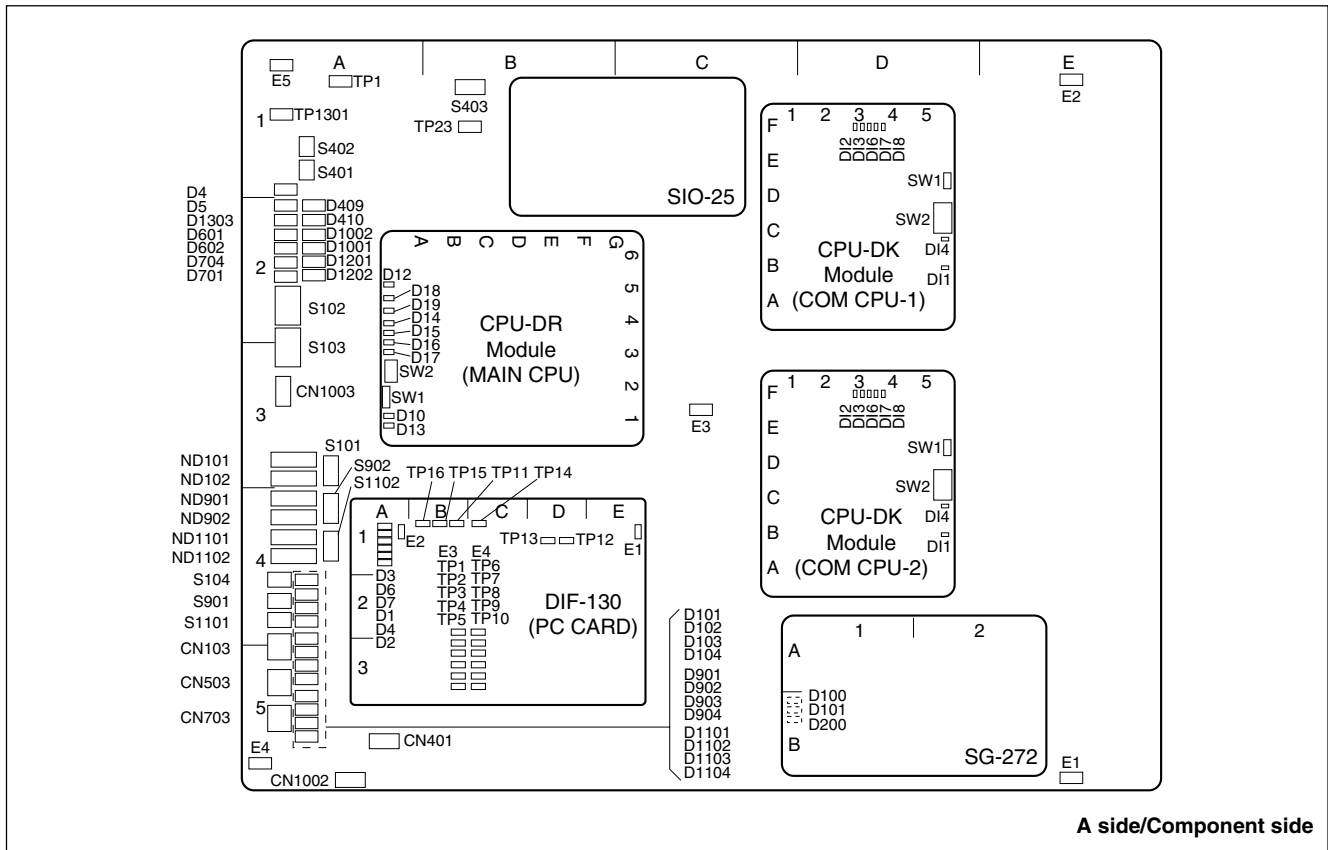
D4 (A-1) : +3.3 V

+3.3 V power supply status indication.
Lit when the +3.3 V power is supplied.

D5 (A-2) : +12 V

+12 V power supply status indication.
Lit when the +12 V power is supplied.
If this LED does not light, the fuse may have blown.

D101, D102, D103, D104 (A-4), ND101 (A-3), ND102 (A-4) : MAIN CPU status LED

Main CPU status indication.

D409 (A-2) : RESET status LED

System reset status indication.
Lit when S401 is pressed or the power voltage drops to +3.3 V.

D410 (A-2) : CPU RESET status LED

CA-54CFA board reset status indication.
Lit when S402 is pressed or the power voltage drops to +3.3 V.

D601 (A-2) : REF EXT status LED

REF IN signal presence/absence status indication.
Lit when the REF signal is input to the REF IN connector.
Not lit when the REF signal is not input to the REF IN connector.

D602 (A-2) : PLL LOCK status LED

REF IN signal format status indication.

Lit when the REF IN signal matches with the switcher format setup.

D701 (A-2) : SBUS RX status LED

S-BUS receive status indication.

Lit while the data receive is in progress.

D704 (A-2) : SBUS TX status LED

S-BUS send status indication.

Lit while the data send is in progress.

D901 (A-4), D902, D903, D904 (A-5) : COM CPU-1 status LED

COM CPU-1 status indication.

D1001 (A-2) : COM1 100 status LED

COM CPU-1 Ethernet communication speed status indication.

  Lit :   100 Mb/s

  Not lit : 10 Mb/s

D1002 (A-2) : COM1 ACT status LED

COM CPU-1 Ethernet communication status indication.

Lit while data send or receive is in progress.

D1101, D1102, D1103, D1104 (A-5) : COM CPU-2 status LED

COM CPU-2 status indication.

D1201 (A-2) : COM2 ACT status LED

COM CPU-2 Ethernet communication status indication.

Lit while data send or receive is in progress.

D1202 (A-2) : COM2 100 status LED

COM CPU-2 Ethernet communication speed status indication.

  Lit :   100 Mb/s

  Not lit : 10 Mb/s

D1303 (A-2) : +5 V

+5 V power supply status indication.

Lit when the +5 V power is supplied.

ND901, ND902 (A-4) : COM CPU-1 status LED

COM CPU-1 status indication.

ND1101, ND1102 (A-4) : COM CPU-2 status LED

COM CPU-2 status indication.

\<Switch\>

S101 (A-3) : Mode setting switch for the main CPU

Sets the modes of the main CPU.

Default setting when shipped from the factory is all OFF.

S102 (A-2) : Group ID setting switch for LAN

Sets the group ID for connecting LAN.

For details, refer to "MVS-8000 System Setup Manual".

S103 (A-2) : Unit ID setting switch for LAN

Sets the unit ID for connecting LAN.

For details, refer to "MVS-8000 System Setup Manual".

S104 (A-4) : Monitor reset switch for the main CPU

Pressing this switch resets the system while maintaining this unit through the main CPU control terminal connector.

S401 (A-1) : System reset switch

Pressing this switch activates the system reset and the system re-starts.

S402 (A-1) : CA-CPU reset switch

Pressing this switch resets the CA-54CFA board.

S403 (B-1) : Switch setting the number of the power supply units

Setting switch for the number of the power supply units that is required for this unit.

Do not change the settings.

By the default setting when shipped from the factory, the bit 1 and 2 are set to ON and the bit 3 and 4 are set to OFF.

S901 (A-4) : Monitor reset switch for the COM CPU-1

Pressing this switch resets the system while maintaining this unit through the COM CPU-1 control terminal.

S902 (A-4) : Modes setting switch for the COM CPU-1

Sets the modes of the COM CPU-1.

Default setting when shipped from the factory is all OFF.

S1101 (A-4) : Monitor reset switch for the COM CPU-2

Pressing this switch resets the system while maintaining this unit through the COM CPU-2 control terminal.

S1102 (A-4) : Modes setting switch for the COM CPU-2

Sets the modes of the COM CPU-2.

Default setting when shipped from the factory is all OFF.

<Connector>

CN103 (A-4) : TERMINAL pin
This pin is connected to the main CPU control terminal
and used during maintenance.
Conforms to RS-232C.

CN401 (A-5) : TERMINAL pin
This pin is connected to the IEEE1394 control terminal and
used during maintenance.
Conforms to IEEE1394.

CN503 (A-5) : TERMINAL pin
This pin is connected to the COM CPU-1 control terminal
and used during maintenance.
Conforms to RS-232C.

CN703 (A-5) : TERMINAL pin
This pin is connected to the COM CPU-2 control terminal
and used during maintenance.
Conforms to RS-232C.

CN1002 (A-5) : TERMINAL pin
This pin is connected to the S-BUS CPU control terminal
and used during maintenance.
Conforms to RS-232C.

CN1003 (A-3) : ISP common connector
Used only for production in the assembly factory. Used for
program writing into the JTAG device with ISP.

<TEST terminal>
**E1 (E-5), E2 (E-1), E3 (C-3), E4 (A-5), E5 (A-1) :
GND terminal**
Use this terminal as the earth point for measuring the
respective check terminals.

TP1 (A-1) : +3.3 V check terminal
+3.3 V measuring terminal.

TP23 (B-1) : +12 V check terminal
+12 V measuring terminal.

TP1301 (A-1) : +5 V check terminal
+5 V measuring terminal.

<LED on the CPU-DR module> : Main CPU
D10 (green) (A-1) : RUN status LED
RUN status indication.
Lit when the CPU-DR module starts operating.

D12 (green) (A-4) : CD (Card Detect) status LED
Lit when the CPU-DR module is inserted correctly into the
parent board.

D13 (green) (A-1) : +2.5 V
Indicates the statue of the +2.5 V power that is generated
by the VCC (CORE) and supplied to the CPU-DR module.
Lit while the specified power is turned on.

**D14, D15, D16, D17 (A-3) (green) : STATUS1 to
STATUS4 status LED**
Used for maintenance purpose. Only the STATUS1 LED is
lit in normal operation.

D18 (green) (A-4) : +3.3 V
Indicates the statue of the VCC (I/O) power that is sup-
plied to the CPU-DR module.
Lit while the specified power is turned on.

D19 (green) (A-4) : CORE status LED
Indicates the statue of the VCC (CORE) power that is
supplied to the CPU-DR module.
Lit while the specified power is turned on.

<Switch on the CPU-DR module> : Main CPU
SW1 (A-1) : RESET switch
Pressing this switch resets the CPU-DR module.
| Note |
In some machines in which the CPU-DR module is
installed, the system reset may be activated.

SW2 (A-2) : MODE switch
8-pin DIP switch
Used only for production in the assembly factory. All
switches are set to OFF for normal operation.
Default setting when shipped from the factory is all OFF.

<LED on the CPU-DK module> : COM CPU-1
                                          : COM CPU-2

DI1 (green) (B-5) : CD (Card Detect) status LED

Lit when the CPU-DK module is inserted correctly to the parent board.

DI2 (green) (F-3) : RUN status LED

Lit when the CPU-DK module starts operating.

DI3 (F-3), DI6 (F-3), DI7 (F-3), DI8 (F-4) (green) : STATUS1 to STATUS4 LED

Used for maintenance purpose. Only the STATUS1 LED is lit in normal operation.

DI4 (green) (B-5) : +3.3 V

Indicates the status of the VCC (CORE) and VCC (I/O) powers that are supplied to the CPU-DK module.

<Switch on the CPU-DK module> : COM CPU-1
                                             : COM CPU-2

SW1 (D-5) : RESET switch

Pressing this switch resets the CPU-DK module.

| Note |

In some machines in which the CPU-DK module is installed, the system reset may be activated.

SW2 (C-5) : MODE switch
8-pin DIP switch

Used only for production in the assembly factory. All switches are set to OFF for normal operation.
Default setting when shipped from the factory is all OFF.

<LED on the DIF-130 board> : PC card
D1 (A-1) : DETECT A

Lit when the socket "A" is inserted correctly.

D2 (A-1) : DETECT B

Lit when the socket "B" is inserted correctly.

D3 (A-1) : +3.3 V

+3.3 V power supply status indication.
Lit when +3.3 V power is supplied.

D4 (A-1) : ACTIVE A

Lit when the socket "A" is active.

D6 (A-1) : CD (Card Detect) status LED

Lit when the DIF-130 board is inserted into the mother board correctly.

D7 (A-1) : GPO status LED

GPO status indication.

< Test terminal on the DIF-130 board > : PC card
E1 (E-1), E2 (A-1), E3 (B-2), E4 (C-2) : GND terminal

Use this terminal as the earth point for measuring the respective check terminals.

TP1 (B-3) : RST# signal check terminal

RST # signal measuring terminal.

TP2 (B-3) : CLK signal check terminal

CLK signal measuring terminal.

TP3 (B-3) : FRAME signal check terminal

FRAME signal measuring terminal.

TP4 (B-3) : IRDY signal check terminal

IRDY signal measuring terminal.

TP5 (B-3) : TRDY signal check terminal

TRDY signal measuring terminal.

TP6 (C-3) : DEVSEL signal check terminal

DEVSEL signal measuring terminal.

TP7 (C-3) : STOP signal check terminal

STOP signal measuring terminal.

TP8 (C-3) : LOCK signal check terminal

LOCK signal measuring terminal.

TP9 (C-3) : PERR signal check terminal
PERR signal measuring terminal.

TP10 (C-3) : SERR signal check terminal
SERR signal measuring terminal.

TP11 (B-1) : PAR signal check terminal
PAR signal measuring terminal.

TP12 (D-1) : INT signal check terminal
INT signal measuring terminal.

TP13 (D-1) : CBE3 signal check terminal
CBE3 signal measuring terminal.

TP14 (C-1) : CBE2 signal check terminal
CBE2 signal measuring terminal.

TP15 (B-1) : CBE1 signal check terminal
CBE1 signal measuring terminal.

TP16 (B-1) : CBE0 signal check terminal
CBE0 signal measuring terminal.

\<LED on the SG-272 board\>
D100 (B-1) : REF OK status LED
Lit while V sync of the reference input is detected.

D101 (B-1) : REF EXT status LED
Lit while sync signal is input to the reference input.

D200 (B-1) : LOCK status LED
Lit while the machine is locked to the reference signal.

2. DVP-24A board (MKE-9040M)

A side/Component side

<LED>
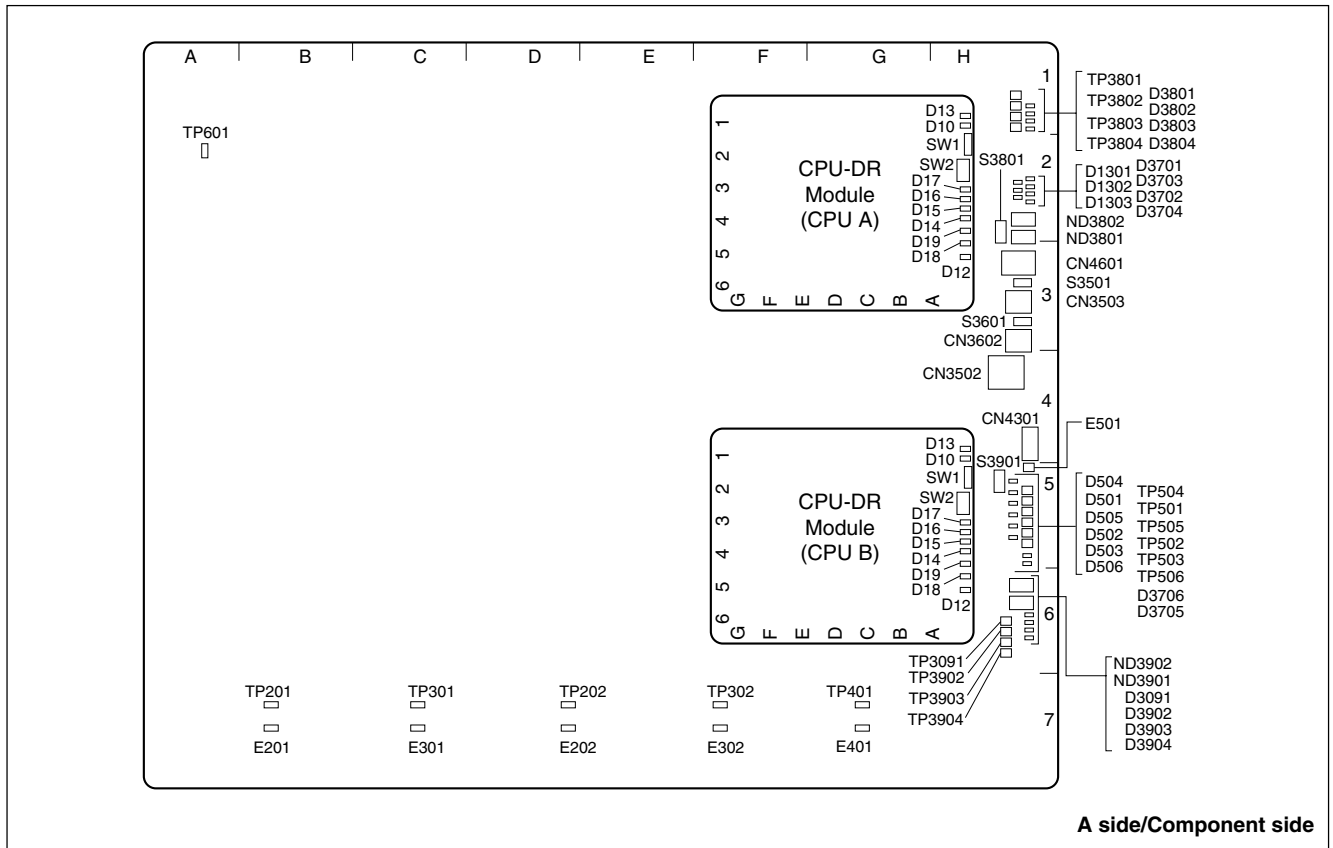
D501 (H-5) : +1.5 V-1

+1.5 V-1 power supply status indication.
Lit when the +1.5 V-1 power is supplied.

D502 (H-5) : +2.5 V-1

+2.5 V-1 power supply status indication.
Lit when the +2.5 V-1 power is supplied.

D503 (H-5) : +3.3 V

+3.3 V power supply status indication.
Lit when the +3.3 V power is supplied.

D504 (H-5) : +1.5 V-2

+1.5 V-2 power supply status indication.
Lit when the +1.5 V-2 power is supplied.

D505 (H-5) : +2.5 V-2

+2.5 V-2 power supply status indication.
Lit when the +2.5 V-2 power is supplied.

D506 (H-5) : +12 V

+12 V power supply status indication.
Lit when the +12 V power is supplied.

D1301 (H-2) : BUS A status LED

Lit when CPU A accesses the FPGA.

D1302 (H-2) : BUS B status LED

Lit when CPU B accesses the FPGA.

D1303 (H-2) : READ status LED

Lit when CPU A or B makes the read access to the FPGA.

D3701 (H-2) : BOOT DONE status LED

Lit when IC108 starts up.

D3702 (H-2) : DLKD status LED

Lit when the DLL (Delay Locked Loop) of the FPGA is locked. If this LED does not light, the FPGA may be defective.

D3703 (H-2) : RCB DONE status LED

Lit when configuration of FPGA is complete.

D3704 (H-2) : SYSTEM status LED

Lit when configuration is complete and FPGA reset is also complete. If the LED does not light, the FPGA may be defective.

D3705 (H-5) : CN EXIST status LED

CN-2357 board presence/absence status indication.
Lit on the DVP-24A board that is installed in the same slot of CN-2357 board when CN-2357 board is present.

D3706 (H-6) : CN POWER status LED

The CN-2357 board power status indication.
Lit on the DVP-24A board that is installed in the same slot of CN-2357 board while the power supply inside the CN-2357 board is activated.

D3801 (H-1) : DBG 7 A status LED

Used for design purpose.

D3802 (H-1) : DBG 6 A status LED

Used for design purpose.

D3803 (H-1) : DBG 5 A status LED

Used for design purpose.

D3804 (H-1) : DBG 4 A status LED

Used for design purpose.

D3901 (H-6) : DBG 7 B status LED

Used for design purpose.

D3902 (H-6) : DBG 6 B status LED

Used for design purpose.

D3903 (H-7) : DBG 5 B status LED

Used for design purpose.

D3904 (H-7) : DBG 4 B status LED

Used for design purpose.

ND3801 (H-2), ND3802 (H-2) : STATUS A LED

DVP-24A board CPU_A status indication.

ND3901 (H-6), ND3902 (H-6) : STATUS B LED

DVP-24A board CPU_B status indication.

<Switch>
S3501 (H-3) : CPU A CONFIG switch

Used for maintenance purpose.

S3601 (H-3) : CPU B CONFIG switch

Used for maintenance purpose.

S3801 (H-2) : SETUP A switch

Used for maintenance purpose.

S3901 (H-5) : SETUP B switch

Used for maintenance purpose.

<Connector>
CN3502 (H-4) : USB A terminal

Used for maintenance purpose.

CN3503 (H-3) : COM A terminal

Used for maintenance purpose.

CN3602 (H-3) : COM B terminal

Used for maintenance purpose.

CN4301 (H-4) : EPR terminal

Used for maintenance purpose.

CN4601 (H-3) : IEEE1394 terminal

Used for maintenance purpose.

<TEST terminal>
E201 (B-7), E202 (D-7), E301 (C-7), E302 (F-7), E401 (G-7), E501 (H-5) : GND terminal

Use this terminal as the earth point for measuring the respective check terminals.

TP201 (B-7) : +1.5 V-1/20 A check terminal

+1.5 V-1/20 A measuring terminal.

TP202 (D-7) : +1.5 V-2/20 A check terminal

+1.5 V-2/20 A measuring terminal.

TP301 (C-7) : +2.5 V-1/20 A check terminal

+2.5 V-1/20 A measuring terminal.

TP302 (F-7) : +2.5 V-2/20 A check terminal

+2.5 V-2/20 A measuring terminal.

TP401 (G-7) : +3.3 V/20 A check terminal

+3.3 V/20 A measuring terminal.

TP501 (H-5) : +1.5 V-1 check terminal
+1.5 V-1 measuring terminal.

TP502 (H-5) : +2.5 V-1 check terminal
+2.5 V-1 measuring terminal.

TP503 (H-5) : +3.3 V check terminal
+3.3 V measuring terminal.

TP504 (H-5) : +1.5 V-2 check terminal
+1.5 V-2 measuring terminal.

TP505 (H-5) : +2.5 V-2 check terminal
+2.5 V-2 measuring terminal.

TP506 (H-5) : +12 V check terminal
+12 V measuring terminal.

TP601 (A-1) : CK (clock for video signal) terminal
Used when checking the clock for video signal.

TP3801 (H-1) : DBG 3 A check terminal
Used for design purpose.

TP3802 (H-1) : DBG 2 A check terminal
Used for design purpose.

TP3803 (H-1) : DBG 1 A check terminal
Used for design purpose.

TP3804 (H-1) : DBG 0 A check terminal
Used for design purpose.

TP3901 (H-6) : DBG 3 B check terminal
Used for design purpose.

TP3902 (H-6) : DBG 2 B check terminal
Used for design purpose.

TP3903 (H-6) : DBG 1 B check terminal
Used for design purpose.

TP3904 (H-6) : DBG 0 B check terminal
Used for design purpose.

<LEDs on the CPU-DR module> (G-2), (G-5)
Refer to <LED on the CPU-DR module> in "1. CA-54CFA Board".

<Switches on the CPU-DR module> (G-2), (G-5)
Refer to <Switches on the CPU-DR module> in "1. CA-54CFA Board".

3. VIF-28 board

A side/Component side

<LED>
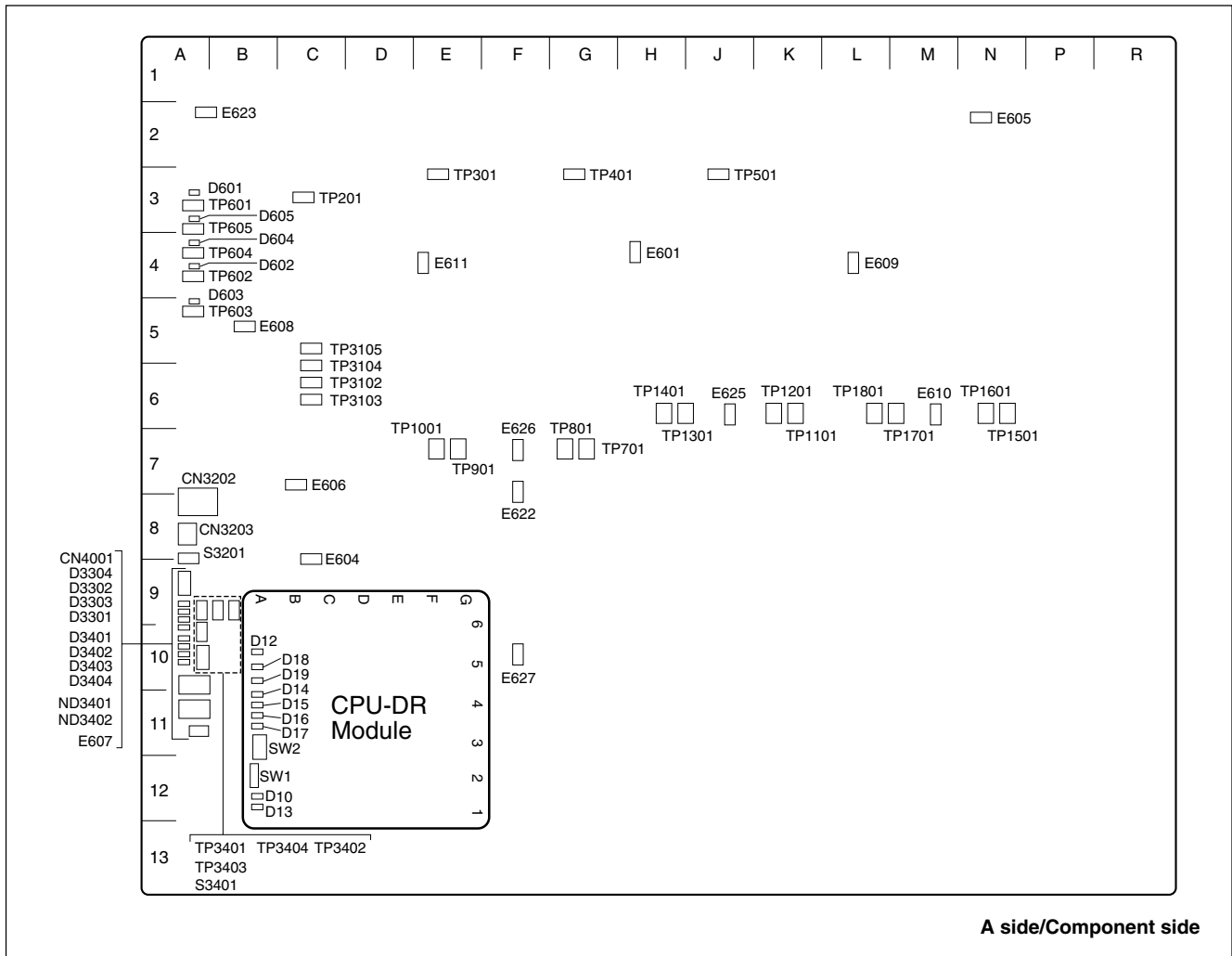
D601 (A-3) : +12 V

+12 V power supply status indication.

Lit when the +12 V power is supplied.

If this LED does not light, the fuse may have blown.

D602 (A-4) : +1.8 V

+1.8 V power supply status indication.

Lit when the +1.8 V power is supplied.

D603 (A-5) : +1.5 V

+1.5 V power supply status indication.

Lit when the +1.5 V power is supplied.

D604 (A-4) : +2.5 V

+2.5 V power supply status indication.

Lit when the +2.5 V power is supplied.

D605 (A-4) : +3.3 V

+3.3 V power supply status indication.

Lit when the +3.3 V power is supplied.

D3301 (A-10) : BOOT DONE status LED

Lit when IC3301 starts up.

D3302 (A-9) : DLKD status LED

Lit when the DLL of the FPGA is locked. If this LED does not light, the FPGA may be defective.

D3303 (A-10) : RCB DONE status LED

Lit when configuration of FPGA is complete.

D3304 (A-9) : SYSTEM status LED

Lit when configuration is complete and FPGA reset is also complete. If the LED does not light, the FPGA may be defective.

D3401, D3402, D3403, D3404 (A-10) : DBG7-4 status LED

Used for design purpose.

ND3401 (A-10), ND3402 (A-11) : STATUS LED

VIF-28 board CPU status indication.

\<Switches>
S3201 (A-8) : CPU CONFIG switch

Used for maintenance purpose.

S3401 (A-10) : SETUP switch

Used for maintenance purpose.

\<Connectors>
CN3202 (A-7) : USB terminal

Used for debugging.

CN3203 (A-8) : TERMINAL pin

This pin is connected to the sub CPU control terminal and used during maintenance. Conforms to RS-232C.

CN4001 (A-9) : ISP common connector

Used only for production in the assembly factory. Used for program writing into the JTAG device with ISP.

\<TEST terminals>
E601 (H-4), E604 (C-9), E605 (N-2), E606 (C-7), E607 (A-11), E608 (B-5), E609 (L-4), E610 (N-6), E611 (E-4), E622 (F-7), E623 (A-2), E625 (J-6), E626 (F-7), E627 (F-10) : GND terminals

Use these terminals as the earth point for measuring the respective check terminals.

TP201 (C-3), TP603 (A-5) : +1.5 V check terminal
+1.5 V measuring terminal.

TP301 (E-3), TP602 (A-5) : +1.8 V check terminal
+1.8 V measuring terminal.

TP401 (G-3), TP604 (A-4) : +2.5 V check terminal
+2.5 V measuring terminal.

TP501 (J-3), TP605 (A-4) : +3.3 V check terminal
+3.3 V measuring terminal.

TP601 (A-4) : +12 V check terminal
+12 V measuring terminal.

TP701 (G-7), TP801 (G-7), TP901 (E-7), TP1001 (E-7), TP1101 (K-6), TP1201 (K-6), TP1301 (J-6), TP1401 (H-6), TP1501 (N-6), TP1601 (N-6), TP1701 (M-6), TP1801 (M-6) : ERR terminal
Used for design purpose.

TP3102 (C-6) : CKX (control timing) signal check terminal
Use this terminal to check the CKX signal supplied from mother board.

TP3103 (C-6) : FD signal check terminal
Use this terminal to check the FD signal supplied from mother board.

TP3104 (C-6) : HD (horizontal sync) signal check terminal
Use this terminal to check the HD signal supplied from mother board.

TP3105 (C-5) : VD (vertical sync) signal check terminal
Use this terminal to check the VD signal supplied from mother board.

TP3401 (A-9), TP3402 (A-9), TP3403 (A-10), TP3404 (A-9) : DBG3-0 check terminal
Used for design purpose.

\<LEDs on the CPU-DR module> (C-11)
Refer to \<LED on the CPU-DR module> in "1. CA-54CFA Board".

\<Switches on the CPU-DR module> (C-11)
Refer to \<Switches on the CPU-DR module> in "1. CA-54CFA Board".

1-9. System Connection

Connection Example of the MVS-8000 System (MKE-9020M Installed)

Reference video signal b)

Ethernet switch a)

Ethernet switch a)

DATA

CONTROL

REMOTE 1-4

MVE-9000-C DME
Processor Pack

BVE-9100 Editing
Control System

Reference
video signal b)

DATA   CTRL   REMOTE 1

CTRL

PERIPH

REMOTE   DATA

MKS-8010 System
Control Unit

Reference video
signal b)

BKS-R Series

HDS-X Series

DCU-8000 Device Control Unit Pack   PERIPH

Reference
video signal b)

MVS-8400/8300/8200 Switcher Processor Pack

VTR

DDR

Audio Mixer

— · — · — · — Cross cable

— · · — · · — Cable with BNC
connectors

a) It is recommended that the CTRL and DATA
LAN networks be configured by connecting
separate Ethernet switches for each LAN.
However, it is also possible to make connections
for both LANs on a single Ethernet switch.

b) Terminate with the supplied 75 Ω terminators.
Terminators are supplied in the product
package.

Flow of Video Signals (MKE-9020M Installed)

The figure below shows the flow of video signals in a MVS-8000 system.

a) For the AC power cord of this unit, refer to Section 1-2 "Power Supply" in this manual.

b) For the AC power cord of the MVS-8000, refer to Section 1-2 "Power Supply" in the MVS-8400/8300/8200 Installation Manual.

c) Terminate with the supplied 75 Ω terminators. Terminators are supplied in the product package.
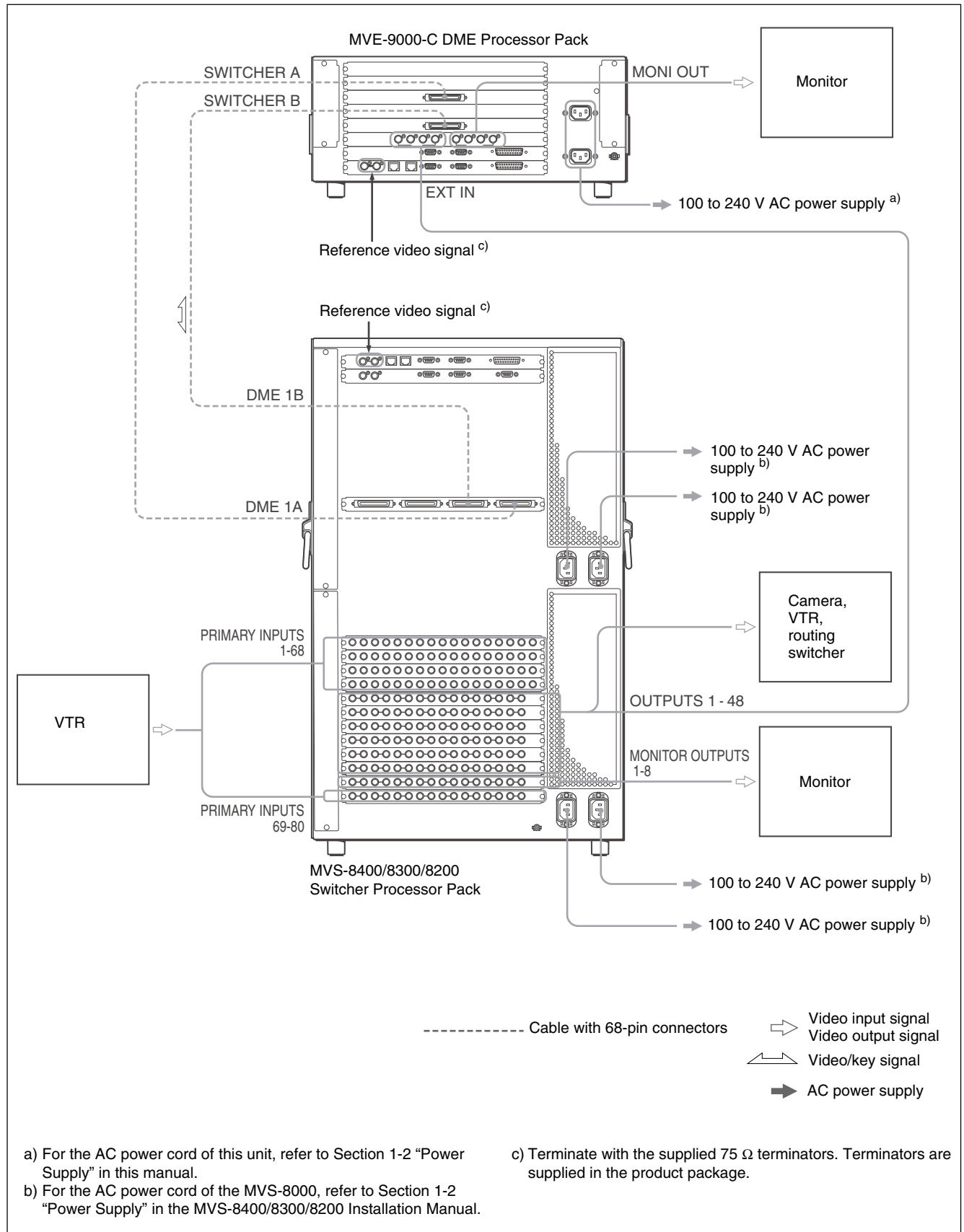
Connection Example of the MVS-8000 System (MKE-9021M Installed)

Reference video signal b)

Ethernet switch a)

Ethernet switch a)

DATA

REMOTE 1-4

CONTROL

MVE-9000-C DME
Processor Pack

BVE-9100 Editing
Control System

Reference
video signal b)

DATA   CTRL   REMOTE 1

CTRL

PERIPH

REMOTE   DATA

MKS-8010 System
Control Unit

Reference video signal b)

BKS-R Series

HDS-X Series

DCU-8000 Device Control Unit Pack

PERIPH

Reference
video signal b)

MVS-8400/8300/8200 Switcher Processor Pack

VTR

DDR

Audio Mixer

—·—·—·—· Cross cable

—··—··—··— Cable with BNC
connectors

a) It is recommended that the CTRL and DATA
LAN networks be configured by connecting
separate Ethernet switches for each LAN.
However, it is also possible to make connections
for both LANs on a single Ethernet switch.

b) Terminate with the supplied 75 Ω terminators.
Terminators are supplied in the product
package.

MVE-9000 IM

Flow of Video Signals (MKE-9021M Installed)

The figure below shows the flow of video signals in a MVS-8000 system.

MVE-9000-C DME Processor Pack

V. K IN/EXT IN

V. K OUT

100 to 240 V AC power supply a)

MONI OUT

Reference video signal c)

Monitor

Reference video signal c)

100 to 240 V AC power supply b)

100 to 240 V AC power supply b)

PRIMARY INPUTS 1-68

OUTPUTS 1-48

MONITOR OUTPUTS 1-8

Monitor

MVS-8400/8300/8200 Switcher Processor Pack

100 to 240 V AC power supply b)

100 to 240 V AC power supply b)

⇨ Video input signal
  Video output signal

◿ Video/key signal

➡ AC power supply

a) For the AC power cord of this unit, refer to Section 1-2 "Power Supply" in this manual.

b) For the AC power cord of the MVS-8000, refer to Section 1-2 "Power Supply" in the MVS-8400/8300/8200 Installation Manual.

c) Terminate with the supplied 75 Ω terminators. Terminators are supplied in the product package.

Section 2
Service Overview

2-1. Troubleshooting

The main power cannot be turned on. (Indicator does not light green.)

Flow1

```
┌─────────────────────────────────────────────┐
│ The main power of the MVE-9000 cannot be     │
│ turned on. (Indicator does not light green.) │
└─────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐   NO   ┌──────────────────┐
│ Is the POWER switch A of the MVE-9000        │ ─────▶ │ Set it to ON.    │
│ turned ON?                                   │        └──────────────────┘
└─────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐   NO   ┌──────────────────────┐
│ Is the power cord of the MVE-9000 connected  │ ─────▶ │ Connect it correctly.│
│ correctly?                                   │        └──────────────────────┘
└─────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐
│ The power supply unit is probably defective. │
└─────────────────────────────────────────────┘
```

The monitor picture is not displayed correctly.

Flow2

```
┌─────────────────────────────────────────────┐
│ The monitor picture is not displayed correctly even │
│ though the main power of the MVE-9000 is turned on. │
└─────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐   NO   ┌───────────────────────────────────────────────┐
│ Are the plug-in boards inserted into their   │ ─────▶ │ Insert the plug-in boards into the correct slots. │
│ correct slots?                               │        │ (Refer to the MVE-9000-C Maintenance Manual.)  │
└─────────────────────────────────────────────┘        └───────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐   NO   ┌───────────────────────────────────────────────┐
│ Are the option boards inserted into their    │ ─────▶ │ Insert the option boards into the correct slots │
│ correct slots?                               │        │ respectively. (Refer to Section 1-4.)          │
└─────────────────────────────────────────────┘        └───────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐   NO   ┌───────────────────────────────────────────────┐
│ Are the input and output cables connected    │ ─────▶ │ Connect the input and output cables and equipment │
│ correctly?                                   │        │ correctly.                                     │
└─────────────────────────────────────────────┘        └───────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐   NO   ┌───────────────────────────────────────────────┐
│ Is the software installed correctly?         │ ─────▶ │ Install the software correctly.                │
│                                              │        │ (Refer to the User's Guide.)                   │
└─────────────────────────────────────────────┘        └───────────────────────────────────────────────┘
            │ YES
            ▼
┌─────────────────────────────────────────────┐   NO   ┌───────────────────────────────────────────────┐
│ Is the system set in the Factory Set mode?   │ ─────▶ │ Start up the system in the Factory Set mode and │
│                                              │        │ check to see.                                  │
└─────────────────────────────────────────────┘        └───────────────────────────────────────────────┘
            │ YES                    ∗ About the Factory Set, refer to Chapter "Engineering Setup"
            ▼                          of the MVS-8000 System User's Guide.
┌─────────────────────────────────────────────┐
│ The MVE-9000 is probably defective.          │
└─────────────────────────────────────────────┘
```
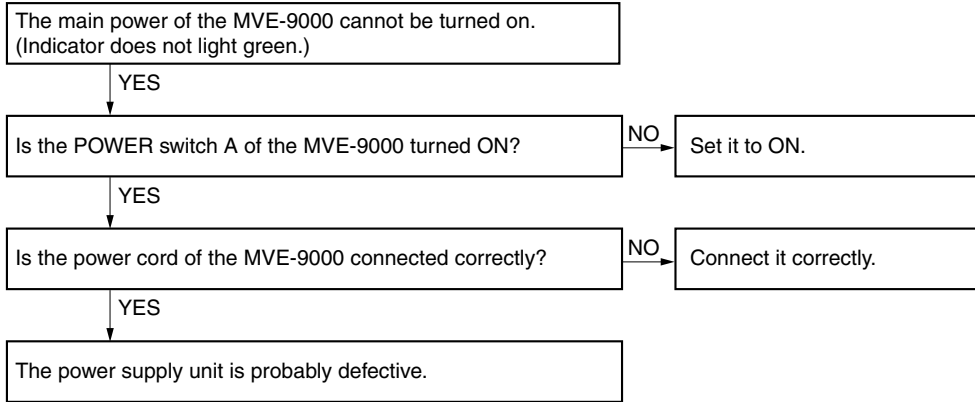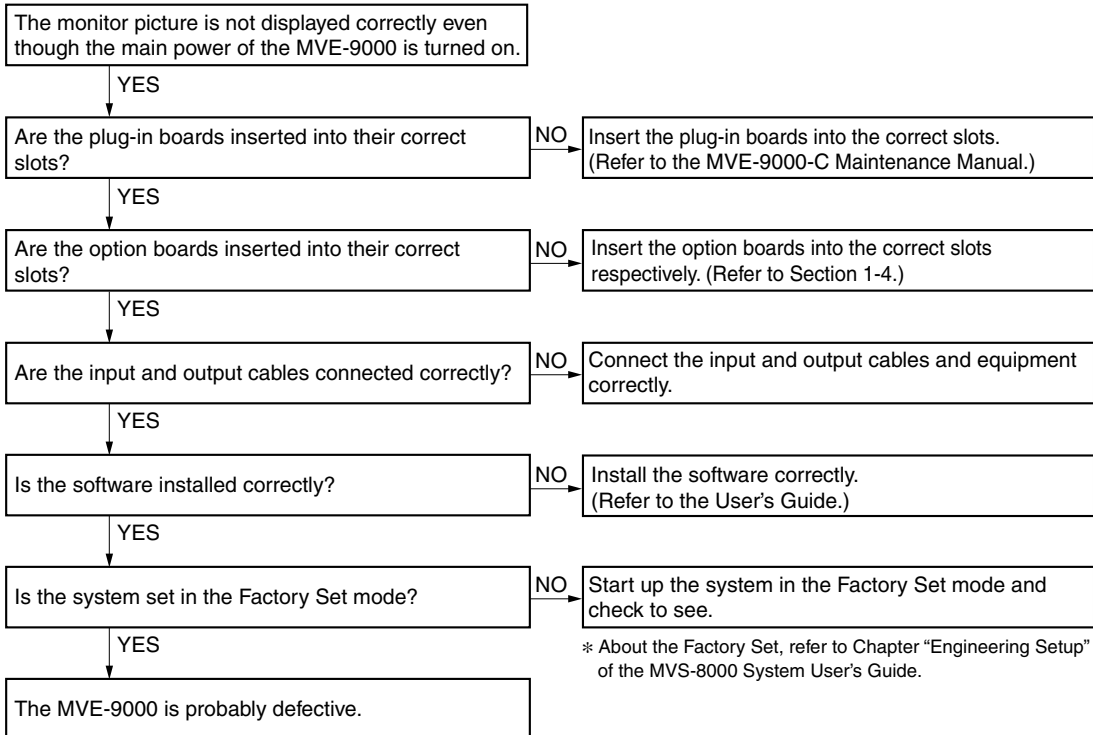
2-2. Periodic Inspection and Maintenance
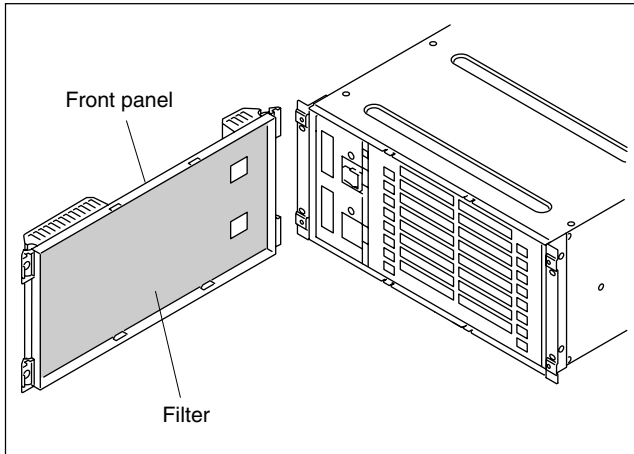
2-2-1. Cleaning

Front panel

The filter on the rear of the front panel can easily accumulate the dust. Be sure to remove dust by cleaning as follows.

1. Remove the front panel. (Refer to Section 1-4-1.)
2. Remove the dust accumulated on the filter with a vacuum cleaner.

   Note

   Cleaning the filter by washing in water is recommended when there is a heavy accumulation of dust.
   Be sure to dry the filter completely after it has been washed.

Fan

If dust has accumulated in the intake of the fan, air is prevented from flowing smoothly and this may result in a temperature rise inside the machine. This may have an adverse effect on performance and the life of the machine.
Cleaning of the fan every month is recommended.
Contact your local Sony Sales Office/Service Center for information on cleaning the fan.
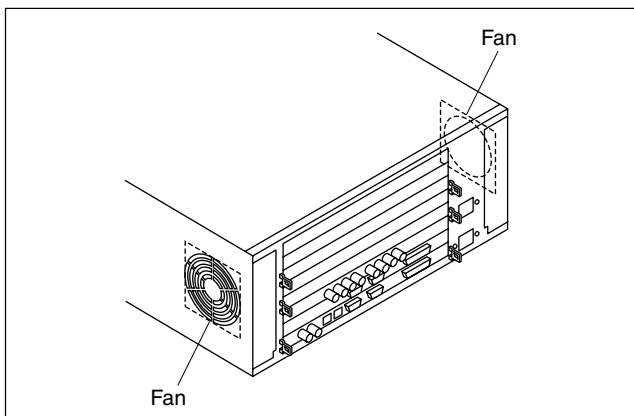
2-3. About the Data Backup Capacitor

A large capacitor is installed on the CA-54CFA board in order to backup the memory storing the setup and other data in the MVE-9000. Leave the main power of the MVE-9000 turned on for an hour or longer in order to charge this capacitor. The data is backed up for about a week when the capacitor is fully charged under normal operating temperature.

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